UNITED STATES DEPARTMENT OF AGRICULTURE
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REED W. BAILEY, DIRECTOR
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PRELIMINARY REPORT OF DOUGLAS-FIR TUSSOCK MOTH INFESTATIONS IN NORTHEASTERN WASHINGTON

By Archie L. Gibson and Tom T. Terrell, Entomologists

Prepared By The
Forest Insect Laboratory
Missoula, Montana

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Reports of the presence of the Douglas-fir tussock moth, Hemerocampa pseudotsugata McD., in scattered areas of Spokane, Pend Oreille, and Stevens counties, Washington, were made in 1950 and 1954 to the Pacific Northwest Forest and Range Experiment Station, Portland, Oregon by the Soil Conservation Service. These reports were forwarded to the Forest Insect Laboratory, formerly located at Coeur d'Alene, Idaho and now at Missoula, Montana. Accompanying the reports were requests for examination of the infested areas by Laboratory entomologists. A preliminary examination of the areas was made on June 27-29, 1955 by the writers and Mr. David G. Fellin of the Laboratory with the assistance of personnel from several agencies.1/

The infestations were found to be those of the tussock moth as reported. From all evidence, it appeared that Douglas-fir tussock moth damage was prevalent in a number of scattered spots extending from Deer Park, Washington north to the international boundary. The damage to the trees in these spots varies from that on single trees to groups of trees covering as much as 20 acres in area. Many of these small isolated infested spots comprise only a few trees around ranch and farm buildings. In between the infested spots are areas of Douglas-fir in various age classes which are not now infested. The location of specific infestations visited during the late June examination are shown in Table 1.

1/ ALFRED A. YOUNG, work unit conservationist, Deer Park and VICTOR H. BARRY, forester, Spokane, Soil Conservation Service; JOHN LINK, district supervisor, PHILIP HILDEBRANDT, forest practices forester, and EDWARD HAZELTINE, assistant district warden, State of Washington Department of Conservation and Development, Division of Forestry; ERNEST L. GROVER, assistant forester, Washington Agricultural Experiment Station, Pullman; ELMER KEGEL, Stevens County farm forester and extension agent, Colville; and ROSWELL LEAVITT, Supervisor, Colville National Forest, Colville.

Table 1. Location of Douglas-fir tussock moth infestations in northeastern Washington, June 1955.

DEER PARK AREA

Ranch	County	Legal Description	Number of Trees	Remarks
L. M. Rasmussen	Spokane	T29N;R42E;Sec. 1 SW ¼;SW ¼	75 ± D.F.	No feeding noted in nearby timber
Townsend	Spokane	T29N;R42E;Sec. 14 In middle of section	1	
Roger Janson	Spokane	T29N;R42E;Sec. 1 NW ¼	1	
Payne	Spokane	T29N;R43E;Sec. 6 NE ¼;SE ¼	100 ± D.F.	On about 2 acres, heavily defoliated.
J. E. Waddell	Pend Orielle	T30N;R43E;Sec. 28 SE ¼;SE ¼	15 ±	
	Pend Orielle	T30N;R43E;Sec. 33 NE ¼;SE ¼	1	
E. T. Williams	Stevens	T30N;R42E;Sec. 33	10	

COLVILLE AREA

Locality	County	Legal Description	Acreage	Remarks
2 Mi. W. of Blue Creek	Stevens	T33N;R39E;3½ Sec. 26 and N ½ Sec. 35	20-acre patch	No nearby buildings. In timber.
4 Mi. S. & 1 Mi. W. of Colville	Stevens	T35N;R39E;Sec. 32 NW ¼	3 - 4 acres	Not near buildings and surrounded by timber.
2 Mi. W. of Colville	Stevens	T35N;R39E;Sec. 20 NW ¼	½-acre	Patch in center of cultivated field.
2 Mi. NW of Colville, D. A. Wise Farm	Stevens	T36N;R39E;Sec. 32 NW ¼	Three 1-acre patches	Three closely connected patches.

At the time of the examination the moth was in the caterpillar stage, chiefly in the second instar, with a few in the first and third instar. Evidence of caterpillar feeding in the infested areas varies from that hardly discernible to heavy. Most of the damage involved a partial defoliation or top killing of infested trees. The damage viewed in the 1955 examination appeared to be decreasing in some areas but increasing in others.

Control measures against the current infestation may be undertaken up to about September 1, 1955 when the caterpillars enter pupation. After that time control measures are thought to be ineffective. The present caterpillar population may be controlled in one of two ways. For scattered individual trees or small groups of trees around farm buildings an application of DDT emulsion from ground sprayers may be used. The spray equipment should be of the pressure type and capable of applying the insecticide to the top of the infested trees. The trees should be thoroughly sprayed with the emulsion. Concentrates containing 20-50% DDT in wettable powders or emulsible oil solutions are available for dilution with water. These can be purchased from commercial insecticide suppliers.

More extensive infestations involving forest acreage may be controlled by the application of a DDT-diesel oil solution applied from low flying airplanes. The solution should contain 1 pound of technical DDT disolved in 1 pint of hydrocarbon solvent with diesel oil added to make one gallon. This solution then is sprayed from airplanes 200 feet above the tree tops at the rate of one gallon per acre. The spray droplet size should average 150 microns in diameter.

The tussock moth infestations in northeastern Washington, while not serious at present, hold a serious threat to Douglas-fir farm trees and forest stands. Should the infestation in the present scattered localities spread to intervening fir stands not now infested, considerable areas of infestation and consequent tree damage could result. Forest protection agencies in this area should be alerted to such a possibility and should report any locations of infestation spread or increase in damage intensity to the Forest Insect Laboratory at Missoula. As an aid in keeping abreast of the infestation situation, the Laboratory is planning to extend its Regional aerial forest insect survey to the northeastern Washington area in late August or September. A special effort will be made to cover the known tussock moth infestations to determine evidence of spread and increased damage. If the situation warrants, Laboratory ground survey crews will be employed following the aerial survey to obtain more detailed information on the infestations. A report of the aerial and ground surveys will be issued later this fall to interested land owners and forest managing agencies.

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